

WENDLEMERE WATER SYSTEM (PWS# 1090150) SOURCE WATER ASSESSMENT REPORT

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State of Idaho Department of Environmental Quality

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Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source, and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for Wendlemere Water System (PWS# 1090150) located in Bonner County, Idaho*, describes the public drinking water system, the associated potential contaminant sources located within a 1,000 foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Wendlemere Water System consists of two wells, designated Well #1 and Well #3. The wells provide water to approximately 100 people. Well #1 was drilled in 1971. The well is 320' deep and uses a 6-inch casing. The Idaho Department of Water Resources (IDWR) *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. There is no well log available for Well #1. The casing extends 18" above the ground and is fitted with a well cap. The wellhead has been maintained appropriately and the well is located outside the 100-year floodplain. Well #1 was assigned a moderate system construction score.

Well #3 was drilled in 1990. The well uses a 6-inch casing that is 20' deep. Table 1 of the *Recommended Standards for Water Works (1997)* states that 6-inch steel casing requires a thickness of 0.280 inches. Well #3's casing is 0.250 inches thick and therefore does not meet today's IDWR's standards. The casing was sealed along its depth with bentonite. At 20' the well enters soft shale, where a casing is not necessary. The well continues to 325' where it enters a layer of hard granite and terminates at 550'. At the time of the well's 2001 sanitary survey, the wellhead was not fitted with a vented sanitary seal. Like Well #1, Well #3 is located outside the 100-year floodplain. The well received a high system construction score.

Well #1 was assigned a high hydrologic sensitivity score. The well is relatively deep, but no well log was available to confirm favorable geologic conditions in the area surrounding the well. Well #3 is also relatively deep, and according to its well log, is located in an area with significant confining layers consisting of shale and hard granite that may retard the vertical transport of contaminants. Well #3 was assigned a low hydrologic sensitivity score.

The wells received low potential contaminant/land use scores in all chemical categories. There are two ponds located near Well #1 that may be a source of microbial contamination. The well must undergo GWUDI (ground water under the direct influence of surface water) testing. Information on testing may be obtained from Mike Nelson of Panhandle Health District 1. The distance between these ponds and Well #3 will protect the well from microbial contamination. This well will not be required to undergo testing. There are no further known potential contaminants located within the wells' source water assessment areas. Information regarding the potential contaminants within Well #1's 1,000-foot boundary have been summarized and included in Table 1.

Table 1.

SITE #	Source Description	Source of Information	Potential Contaminants
1	Surface Water- Pond	Enhanced Inventory	Microbial
2	Surface Water- Pond	Enhanced Inventory	Microbial

The Wendlemere Water System wells are manifolded together before distribution. Water samples are collected after the manifold. The system does not treat its water, as treatment is neither necessary nor required. The system samples for total coliform quarterly and has an excellent sampling history. Nitrate is monitored annually. Measurements for this contaminant range from non-detectable to .280mg/L, well below the maximum contaminant level of 10mg/L.

The wells received overall susceptibility rankings of moderate in all chemical categories. A copy of the susceptibility analysis for your system along with a map showing any potential contaminant sources is included with this summary.

The map displays the study area with a scale bar from 250 to 1000 feet. A large blue circle is centered on the 2069 T14 area. Wells #1 and #3 are marked with red dots. The Idaho Department of Environmental Quality logo is in the bottom right corner.

Legend

Well #1	Well #3	Well #4
Well #5	Well #6	Well #7
Well #8	Well #9	Well #10
Well #11	Well #12	Well #13
Well #14	Well #15	Well #16
Well #17	Well #18	Well #19
Well #20	Well #21	Well #22
Well #23	Well #24	Well #25
Well #26	Well #27	Well #28
Well #29	Well #30	Well #31
Well #32	Well #33	Well #34
Well #35	Well #36	Well #37
Well #38	Well #39	Well #40
Well #41	Well #42	Well #43
Well #44	Well #45	Well #46
Well #47	Well #48	Well #49
Well #50	Well #51	Well #52
Well #53	Well #54	Well #55
Well #56	Well #57	Well #58
Well #59	Well #60	Well #61
Well #62	Well #63	Well #64
Well #65	Well #66	Well #67
Well #68	Well #69	Well #70
Well #71	Well #72	Well #73
Well #74	Well #75	Well #76
Well #77	Well #78	Well #79
Well #80	Well #81	Well #82
Well #83	Well #84	Well #85
Well #86	Well #87	Well #88
Well #89	Well #90	Well #91
Well #92	Well #93	Well #94
Well #95	Well #96	Well #97
Well #98	Well #99	Well #100

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Wendlemere Water System should focus drinking water protection activities on maintaining current water quality. Continuing to operate the system in compliance with the *Idaho Rules for Public Drinking Water Systems* is the best drinking water protection activity for the resort. Additionally, the water system should consider developing a drinking water protection plan that addresses public education, management of potential contaminant sites and contingency components. The well's source water assessment area should be considered when siting new waste disposal systems, roads and buildings. Local residents should be made aware of the location of the well and the location of the well's source water assessment areas. They should be advised of methods for the proper disposal of household hazardous wastes in these areas and of septic system maintenance procedures. The water system must complete GWUDI monitoring for Well #1 as required by the state. Flow from the ponds near the wellhead should be directed away from the wellhead to decrease the chance of flooding. This should be monitored regularly. Lastly, the water system should draw up a contingency plan that outlines emergency response activities and identifies an alternative source of water should one become necessary. A template for developing an emergency response plan is available on IDEQ's website at www.deq.state.id.us/water/water1.htm. Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing drinking water protection (formerly wellhead protection) strategies please contact Melinda Harper, Idaho Rural Water Association, at 1-800-962-3257 or Shantel Aparicio at the Coeur d'Alene regional IDEQ office at (208) 769-1422.

Attachment A

Wendlemere Water System Susceptibility Analysis Worksheet

Ground Water Susceptibility Report

Public Water System Name : WENDLEMERE WATER SYSTEM

Well# : WELL #1

Public Water System Number 1090150

10/16/2002 10:20:51 AM

1. System Construction		SCORE			
Drill Date	5/1/1971				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES	2001			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	0	0	0	2
(Score = # Sources X 2) 8 Points Maximum		0	0	0	4
Sources of Class II or III leachable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	4
Cumulative Potential Contaminant / Land Use Score		0	0	0	4
4. Final Susceptibility Source Score		10	10	10	12
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report

Public Water System Name : WENDLEMERE WATER SYSTEM

Well# : WELL #3

Public Water System Number 1090150

10/16/2002 10:21:00 AM

1. System Construction		SCORE			
Drill Date	8/28/1990				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	2001			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	NO	1			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	NO	1			
Total System Construction Score		5			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	YES	0			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		2			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leachable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		0	0	0	0
4. Final Susceptibility Source Score		7	7	7	7
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score =
Hydrologic Sensitivity + System
Construction + (Potential
Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic
Sensitivity + System Construction +
(Potential Contaminant/Land Use x
0.375)

Ground Water Final Susceptibility
Scoring

0-5 = Low Susceptibility

6-12 = Moderate Susceptibility

> 13 = High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund, is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.